

### **REMARKS**

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow. With this amendment, no claims have been amended, no claims have been cancelled, and claims 56-59 have been added. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier. Thus, claims 1-5, 7-16, 19-21, and 41-59 are pending in the application, with claims 5 and 41-53 withdrawn from consideration. New claims 56 and 57 are supported by the disclosure in paragraph [0037] of the specification. Support for new claims 58 and 59 can be found in at least paragraph [0019] of the specification. No new matter has been added.

#### Claim Rejections - 35 USC § 112

Claims 1-4, 7-16, 19-21, 54, and 55 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the Examiner alleges the term "similar" in claims 1 and 14 is a relative term which renders the claim indefinite. Applicants respectfully traverse the rejection.

"Claims must always be read in light of the specification." *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005)(Internal citations omitted). Indeed, the Examiner has acknowledged this point. "For the purpose of examination, the limitation has been interpreted in light of the specification, which discloses that the structure/distribution approach can be based on DNA molecular recognition ability (p9, paragraph [0037])." (Office action, page 3, lines 11-14). Applicants agree with the Examiner's understanding of paragraph [0037] of the specification and submit that one of ordinary skill in the art reading the specification would find the term "similar" as used in claims 1 and 14 definite.

Furthermore, Applicants respectfully submit that a search of the USPTO patent database shows that there are more than 50,000 patents with claims reciting the term “similar.” Clearly, the use of the term “similar” in a patent claim is common and not prohibited under the law.

In light of the above clarifications, Applicants respectfully request withdrawal of the rejection.

### Claim Rejections - 35 USC § 103

Claims 1-4,7-12,19-21, and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li (WO 02/031463 A2, Apr. 18,2002) in view of DeNuzzio et al. (WO 2004/001404 A1, published on December 31,2003 and filed on June 19, 2003), Chazalviel et al. (*Applied Spectroscopy*, 1993, Vol. 47, pp1411-1416), and Yoshida et al. (JP 07-184883 A, July 25, 1995). Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Li (WO 02/031463 A2, Apr. 18,2002) in view of DeNuzzio et al. (WO 2004/001404 A1, published on December 31,2003 and filed on June 19, 2003), Chazalviel et al. (*Applied Spectroscopy*, 1993, Vol. 47, pp1411-1416), and Yoshida et al. (JP 07-184883 A, July 25,1995) as applied to claims 1 and 10 above, and further in view of Dai et al (U.S. Patent No. 6,528,020, Mar. 4, 2003). Claim 14-16 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li (WO 02/031463 A2, Apr. 18,2002) in view of DeNuzzio et al. (WO 2004/001404 A1, published on December 31,2003 and filed on June 19, 2003), Ito (U.S. Patent No. 5,384,028, Jan. 24, 1995), and Girault et al. (U.S. Patent No. 5,512,489, Apr. 30, 1996). Applicants respectfully traverse the rejections.

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). *See also* MPEP 2143.03. Further, “Rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of

obviousness". *KSR Int'l Co. v. Teleflex Inc.*, No. 04-1350, slip op. at 11 (U.S. April 30, 2007)(citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). Independent claim 1 includes the feature "wherein the waveguide total internal reflection prism is coupled to the microfluidic trench." Independent claim 14 includes the feature "wherein a first tip of the first electrode is located in the microfluidic trench and electronically coupled to a first trace via a first conductive plug and a second tip of the second electrode is located in the microfluidic trench and electronically coupled to a second trace via a second conductive plug." These features are neither taught nor suggested in the applied art.

The Examiner acknowledges that Li, (and DeNuzzio and Chazalviel) "does not specifically teach an apparatus further comprising a waveguide, which includes a total internal reflection prism, wherein the spectroscope is optically coupled to the total internal reflection prism." (Office action, sentence spanning pages 6-7). The Examiner relies on Yashida to close this gap:

With respect to claims 1 and 7, Yoshida et al. teaches an optical system comprising FT-IR spectroscopy and an ATR (attenuated total internal reflection) prism, which provides infrared rays to infrared analysis equipment such as FT-IR spectroscopy (see entire translated document, particularly Abstract and paragraph [0005]). (Office action, page 7, last paragraph).

Since the FT-IR spectroscopy of Yoshida et al. **can be** coupled to the electrochemical interfaces of the condensed array addressed device of Li as set forth above and the electrochemical interfaces of Li includes a microfluidic trench containing addressable cells having at least two electrodes, the combined teachings of Li, DeNuzzio et al., Chazalviel et al. and Yoshida et al. meet the amended feature of "the waveguide total internal reflection prism is coupled to the microfluidic trench." (Office action, page 10, lines 1-7)(Emphasis added).

The Examiner has merely hypothesized that the FT-IR spectroscopy of Yoshida et al. **can be** coupled to the electrochemical interfaces of the condensed array addressed device of Li. The Examiner has not explained *how* or *why* one of ordinary skill in the art at

the time of the invention would have modified Li with Yoshida to couple the waveguide total internal reflection prism to the microfluidic trench as recited in claim 1. That is, the Examiner has failed to provide a rational basis for making the hypothesized modification. Thus, the Examiner has failed to make a *prima facie* case of obviousness of independent claim 1 or any of the claims that depend from claim 1.

Regarding independent claim 14, the Examiner has failed to provide a teaching, suggestion, motivation or any other basis for establishing a *prima facie* case of obviousness as stated in the *KSR* decision for the limitation “wherein a first tip of the first electrode is located in the microfluidic trench and electronically coupled to a first trace via a first conductive plug and a second tip of the second electrode is located in the microfluidic trench and electronically coupled to a second trace via a second conductive plug.” Contrary to the allegation of the Examiner, Li does not teach “[t]he first electrode and the second electrode are each coupled to first and second traces (input and outputs) via first and second conductive plugs, respectively (Fig. 5 and p17, 2<sup>nd</sup> paragraph). (Office action, page 13, lines, 14-16). Li teaches that “the electrodes in each row share an interconnection or lead.” That is, Li is silent regarding the use of conductive plugs. Further, none of the other applied references mention conductive plugs. Thus, none of the applied references either singly or in combination teach or suggest “wherein a first tip of the first electrode is located in the microfluidic trench and electronically coupled to a first trace via a first conductive plug and a second tip of the second electrode is located in the microfluidic trench and electronically coupled to a second trace via a second conductive plug” as recited in independent claim 14. Applicant respectfully requests withdrawal of independent claim 14 and the claims that depend from independent claim 14.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Respectfully submitted,

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